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ENVIRONMENT, SOCIO-ECONOMIC DEVELOPMENT AND SUSTAINABILITY IN ALBANIAN PART OF PARK PRESPA

Dorina Grazhdani[1], Soniela Grazhdani[2], Diana Shehu[3]
[1] Department of Agribusiness, Agricultural University of Tirana, Albania
[2] Department of Agriculture, Polytechnic University "Fan S. Noli" of Korça, Albania
[3]Department of Economy and Agricultural Policies, Agricultural University of Tirana, Albania
E-mail: d.grazhdani@yahoo.com, sonielagrazhdani@yahoo.com, esidial@yahoo.com

Abstract

The aim of this paper is to assess the environmental situation and opportunities for sustainable development of Albanian part of Prespa Park. The ecosystems within the Prespa Lakes Basin are of global significance and harbour endemic floral and faunal species. Despite the contribution of a range of services to human wellbeing, these ecosystems are facing numerous challenges, stemming for the existing practices in many areas that directly or indirectly affect the lakes. Productive sectors are failing to incorporate ecosystem health objectives into their daily management practices and protected areas are under threat and can barely serve as biodiversity refuges. Because of these concerns, some people advocate to adopt sustainable practices with the goals of preserving the natural resource base, reducing the input costs, and protecting human health. This paper is focused on issues and opportunities arising from linkages between social economic development and environment. First a summary information on trends and constrains of social economic indicators are provided. Then, associations of environmental issues with social economic activities are analyzed using SWOT analysis method. Finally, some remedies and possible ways for sustainable development are presented in the present paper.

Keywords: ecosystem, environment, Prespa, social economic, sustainable development, SWOT method.

1. INTRODUCTION

Prespa Lakes area (Figure 1) is an area internationality known for its ecological importance. Meanwhile, Prespa area abounds in rare animal and plant species, and contains some extraordinary examples of Byzantine heritage. Livestock, farming and fishing are the most important sources of income in the Prespa lowland. The basin of the Prespa lakes is endowed with an exceptional biodiversity. The region has been recognized as a European and Global Hotspot of Biodiverity, not only because of the sheer number of species and habitats present, but also due to their quality, such as rarity and conservation significance.

The whole area is characterized by increased migration rates especially of the young, difficulties in trading of local production, disability to adapt to new technologies and challenges, limited participation in decision-making, inadequate social facilities, unemployment and inability of local people to explore and use sustainably the area's competitive advantages.

Local economic conditions are poor, conditions are tough and the quality of life is of a low standard. There are many social problems and the lakes provide one of the few means of feeding the local population. The majority of the local population in the Prespa basin is occupied in the primary sector: agriculture, animal breeding, fishing, forestry. The life in the Prespa Park revolves around agriculture that engages approximately 75% of work force. Poor farming methods, timbering, overgrazing and soil erosion have damaged severely some gently sloping to sloping soils, many of which are today abandoned to brush. In Albania, activities of the primary sector are extensive rather than intensive. The productivity is low due to unfertile soils, as is the use of pesticides and fertilizers. This, on the other hand, indicates the area's potential for organic farming.

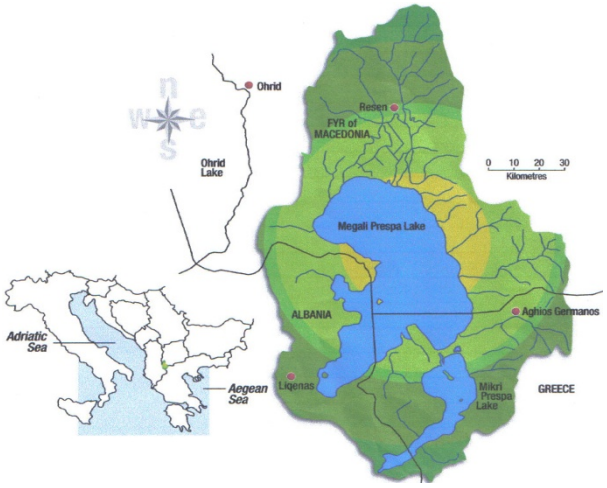

Figure 1. Prespa Lake Region

Fishery is another important income source in Prespa. Fishing has provided a source of income for hundreds of years and still exists today, although at a much smaller scale. Unique traditional fishing methods and tools remain an important element of the local culture and tradition, but are being

replaced with modern ones. It is estimated that approximately 50-60 fishermen across the Prespa Basin earn a significant portion of their income just from the high-value carp fishery.
In view of the character and the particularities of the region, large-scale or intensive development initiatives (intensive agriculture, manufacture, industry, mining, mass tourism etc.) are often incompatible with the preservation of the values of the area. With a basin-wide productive system not balanced, the future development policy has to be focused on the promotion of structural changes by emphasizing activities of the primary and tertiary sectors where the area's competitive advantages converge.
Local people have put great emphasis on tourism development in the area. However, the actual growth of tourism in the area is limited, in particular in the near future, and will depend on a number of factors. Among others, the most needed infrastructure, such as solid waste and wastewater management, drinking water and energy supply etc. are regarded as a severe constraint for the development of tourism.
Considering the above, in this paper firstlly, the degradation of ecosystems and loss of biodiversity values in PNP and the park capacity to effectively integrate biodiversity conservation requirements into the management of the productive landscape is explored. Then, low awareness of status of biodiversity, its importance to sustainable development and socio-economic welfare, and effects of activities on it among stakeholders is documented. Concluding section of this paper gives priority issues to be evolved for sustainable development in Prespa National Park (PNP).

2. MATERIAL AND METHOD

Survey has been found by us to be almost the only practical means of collecting data about a large number of farmers. Because the farming units were large, our survey was based on samples, which were taken following the strategy to meet statistical reliability objectives. This study is built also on the collection of secondary data pertaining to the study area. This includes local and international published materials, local and international reports and unpublished local information.
After a preliminary analysis of the secondary data, we collected primary data by conducing farmer interviews and making both technical and socio-economic observation of the farming system. Then we analysed both primary and secondary data, described the farming system in the survey area in terms of biophysical and socio-economic setting, and drafted the on-farm survey background. For the performance of needs identification and community assessment for sustanable development in Prespa area in Albania, is used the SWOT analysis method.

3. RESULTS AND DISCUSSIONS

3.1. Abiotic Environment

a. Description and Physical Features

The Prespa region (~41^0 N latitude, ~23^0 E longitude) is located in the Balkan Peninsula, in south-eastern Europe. It is a high-altitude basin which includes two inter-linked lakes, Macro Prespa and Micro Prespa and the surrounding mountain. The Macro Prespa Lake has a surface area of 253.6 km^2, Micro Prespa is 47.4 km^2 and the total area of the combined drainage basins and lakes is 2519 km^2.
The two Prespa Lakes are situated at an altitude of 850 m above sea level. The highest peaks of the surrounding mountains reach about 2600 m above sea level. The two Prespa Lakes are separated to the west from Ohrid Lake by an elongated calciferous mountain block comprised of Galiçica and Mali i Thate mountains (rising to 2287 m asl). The mountains to the east and south of the watershed are comprised of silicate rock, producing soils and growing conditions that differ significantly from the soils resulting from the calciferous mountains to the north and west of the watershed. The calciferous rock facilitates underground water flow from the Prespa Lakes to the lower Ohrid Lake, where water surfaces in mighty springs at Drilon (in Albania) and Sveti Naum (in the FYR of Macedonia).
The climate of the Prespa region is subject to Mediterranean and continental influences and may be characterised as continental-central European. It is characterised by winters with long periods of high rainfall, snow and low temperatures and warm but moderate summers. Mean monthly temperatures in the Prespa region average 9-10^0 C. The average annual rainfall is approximately 647 mm.

b. Water management and interventions

In 1953, the Devoll River was linked to Lake Micro Prespa in order to collect spring and winter rainfall and pour it into the Lake, and, on the other hand, to draw off water from the Lake during summer for irrigation. In 1976, the network was expanded in order to irrigate the Devoll and Korça (ex-Maliq swamp) valleys (22500 ha). Two electric pumps and a dam was added leading water from Micro Prespa into the Ventrok canal [3]. By this encroachment the upstream area of the Devoll River has artificially become part of the water catchment of the Prespa

basin. Through this twofold water exchange with the lake (from the river to the lake and afterward from the lake to the canal) 30-70 million m^3 of water entered the lake annually and 90 m^3 were discharged from the lake through the canal.

At the Albanian part of Macro Prespa reservoirs for irrigation were created. There were 5 pumps installed on the shore near Macro Prespa Lake pumping approximately 7.5 million m^3 water from the lake that was used in the period 1973-1988 for agricultural purposes and other needs of the local population. At present, only one irrigation reservoir is active in Djellas and is used as a reservoir for drinking water for the village. Water abstraction from the lakes for irrigation purposes, use of fertiliser and pesticides, disposal of urban wastewater, and of solid household wastes increase eutrophication, enhance vegetation growth at the littoral zone, and increase growth of organic substances in shallow waters, leading to a reduction of the spawning grounds of endemic fish species and feeding grounds of rare water birds.

Along the Albanian side extensive wood and forest cutting, along with the diversion of the Devolli River into Micro Prespa, resulted in the deposition of 40000 m^3 of solid materials into the lake and in the destruction of the wetland. During the last ten years, water level of Macro Prespa has decreased more than 6 m. The reasons for this phenomenon have not yet been investigated, however existing hypotheses suggest that this may be due in large part to the severe drought conditions prevailing in the region for some years which have also caused a significant lowering of the water levels of nearby lakes in Greece, or possibly due to an earthquake which may have affected underground water channels connected to Macro Prespa.

The reasons for the lowering of the water level are considered to be due to natural causes as there has not been any major change in land-use and water-use patterns in the surrounding areas in recent years. The resulting increased lake water eutrophication has been pinpointed in many scientific studies in the three countries. As a result, habitat diversity has decreased and many types of 'natural ecosystem' are now confined to relatively restricted areas [1]. Recognition of the restricted and threatened nature of the remaining extents of representative natural ecosystems has been an important stimulus for reinforcing conservation action in the region, as indicated by the creation of numerous protected areas in the Lakes region.

3.2. Biotic Environment

The studies indicate that the entire Prespa region hosts unique biotopes that are important from a European conservation perspective [4]. Although no habitat type can be regarded as rare at a global level, a number of forests in Prespa Park are classed as habitat types of European interest, including the following:

- The thermophilous deciduous woodland of *Quercetum trojanae macedonicum* develops on steep, stony terrains up to 1200 meters above sea level. This type of forest habitat is registered along both sides of the road between Djellas and Biglla in Albania;
- The Grecian juniper woods *Juniperus excelsa*, rare in Europe where it occurs only in northern parts of Greece and in FYR of Macedonia, with the Prespa lakes basin being an important site. (e.g., Kallamas in Albania).

The flora is composed of more than 1500 plant species with 19 endemic plant species recorded for the three countries. Two plant species are listed in IUCN's Red Data Book as "vulnerable" and 12 as rare. As far as the wetland ecosystems are concerned, the littoral zone of Micro Prespa is covered with extensive reedbeds (Ass. *Phragmitetum* predominates) with several open water areas covered by aquatic vegetation. The morphology and structure of wetland ecosystems favour breeding and feeding of rare water bird species.

The aquatic ecosystems of the region are rich in endemic species such as the Prespa barbel (*Barbus prespensis*), the Prespa nose (*Chondrostoma nasus prespensis*) and others. Of the 12 indigenous fish taxa identified, 4 species (*Barbus prespensis, Chondrostoma prespensis, Chalcaburnus belvica, Gobitis meridionalis*) and 8 sub-species are endemic to the Prespa Lakes or to the Balkans.

With about 270 bird species, the avifauna of the Prespa lakes region is highly diverse. Among them are globally endangered species, such as the Dalmatian pelican (*Pelecanus crispus*) (700 pairs, i.e. the biggest breeding colony in the world) and the Pygmy cormorant (*Phalacrocorax pygmaeus*), both of which breed and winter in the Greek section of Prespa. The Greek Prespa is also the only breeding area of the White pelican (*Pelecanus onocrotalus*) in the European Union, while the globally endangered Ferruginous duck (*Aythya nyroca*) breeds in the Ezerani Lagoon in the Macedonia and Micro Prespa in Greece. All these and many other bird species use the whole surface of the two lakes in all countries as feeding grounds.

Based on the richness of waterfowl the Macedonian and Greek sides of the lake system are recognised as wetlands of international importance by the *Convention on Protection of Wetlands of*

International Importance (Ramsar, 1971). The Ramsar designation in Greece is based primarily on breeding and wintering populations, whereas in the Macedonia the designation is based on feeding species. Furthermore, the Greek side of the wetland system is considered a Special Protection Area (SPA) under the *Birds Directive* of the European Union (79/409/EEC) and is part of the Greek contribution to the NATURA 2000 network of protected sites according to the *Directive for the Conservation of Natural Habitats of Wild Flora and Fauna* (92/43 EEC).

It should also be noted that the lake area hosts endangered mammal species, such as bears (*Ursus arctos*), wolves (*Canis lupus*), and lynx (*Lynx lynx*). There are also 25 recorded species of bats in the region. Among these are nine species that are either threatened with extinction or are classified as vulnerable.

3.3. Anthropogenic Environment

a. Social Economic Indicators

In addition to its natural values, the lake region is considered to be of great cultural/historic importance with high potential for tourism. The region has been inhabited for several centuries. Numerous archaeological sites prove that in ancient times an important trade route of the Western Roman Empire – the Via Egnatia – passed close to the region. The Byzantine and meta-Byzantine monuments of the Prespa basin are numerous and an evidence of the rich cultural and historic heritage of the whole area.

The distribution of villages and people located around the two Prespa lakes shows that approximately 5300 persons live in 12 villages on the Albanian side. In the past decades, there has been limited interaction among the people living in this region, due to the fact that it was dissected by military border zones, which formed part of the so-called "Iron Curtain".

There have been dramatic fluctuations in the population of Prespa reflecting the political, social, and economic changes that have taken place over the past century. there has been a slight increase in the population of the Albanian Prespa (from 2931 to 5063 between 1945 and 1989). The working age group in the Albanian Prespa is 66% of the total population. Based on a various socio, economical factor in Prespa there has been made a calculation that unemployment rate is around 28% or even more that means that the employment rate is 72%. The public health care infrastructure, generally said is poor for the Commune of Liqenas. The situation is worse during the winter time due to the transport infrastructure problems.

In the Commune of Liqenas there is a Health Center in Liqenas offering health service at limited rate and first aid as well. Among the villages there are health houses with limited service capacities. The entire region has 2 health centers and 6 health houses with only 2 doctors and 16 nurses in total. Every village has at least one nurse. Based on the methodologies that are currently in practice in our country with synthetic coeficient is understood the number of births for 1000 inhabitants for a time of one year, for the period of 2000 – 2009 the value is a maximum of 14.1 in the year 2000 and minimum rate 3.7 registered in 2008.

b. Agricultural Sector

Most of the households are engaged in agriculture (farming and livestock production). Farming is labor intensive, with women's labor particularly important in crop production, and men's labor crucial in animal husbandry. Livestock husbandry is integral to the farming system. Thus, almost all of the households hold one or two cows for milk, ten to fifteen chickens an a few sheep and goats. The total number of agricultural holdings are 1448 and they are all mixed holdings (agriculture and stock breeding) with almost 2185 ha of total land. Cereals (i.e. wheat, corn, barely and rye) are the main crops covering the 69.7% of the total land. The remaining 30% is cultivated with potatoes (1.4%), dry beans (3.2%), vegetables (8.2%), alfalfa (9.6%), fruits (0.9%) and vineyards (6.9%).

Three main problems faced by agriculture are: First, the existence of an agricultural farm with minimal size (1.4 ha), fragmented, closed in itself and oriented towards the fulfillment of the family needs; second, the existence of a considerably large family which needs to operate in the micro farm; Third, the lack of irrigation system. Under these conditions, the farmers have found the adoption of very complex production systems including a large number of crops and animals.

The small farm size and the even smaller average size of each parcel, constrain the development of mechanization and the productivity of the crop production sector. Despite the demand for agricultural land, it is still utilized with inefficiency. All arable land is not cultivated intensively.

c. Livestock breeding

As for livestock production, goats and sheep are predominant and cattle plays important role (Table 1). Actually the animal production is taking priority in the total agricultural production. In the future this tendency, especially with possible tourism development and space organization in the Park

conditions, will become most important. Even now livestock has an important economic value.

The breeding systems for small ruminants are still traditional: exploitation of the summer and winter meadows and low forest, grazing in the considerable area of non cultivated agricultural land, tree lopping and a relatively limited use of concentration and dry feed. Concerning the possible future perspectives, it is estimated that the total sheep and goat numbers will decrease, cow numbers may increase or remain stable and some farmers will specialize and enlarge their herd size, but rather in cow and sheep than in goats.

Table 1. Livestock numbers from settlements inside the NPP

Commune or village	Cattle	Sheep	Goats	Donkey horses mules	Total LSU*
Liqenas	2 560	2 567	3 267	650	**4 377**
Zagradec	50	400	50	50	**190**
Shueci	44	400	250	40	**214**
Rakicka	60	300	500	50	**270**
Total	**2 714**	**3 667**	**4 067**	**790**	**5 051**

Source: Commune Liqenas, Bilisht Qendër and Progër

* Livestock Units: Cattle = 1, sheep, goats = 0.2, Donkeys, horses, mules = 1

Within the National Park Prespa there are no markets and shops for dairy products and meat through own subsistence production. There are no marketing and processing capacities inside the Park. Almost 100% of dairy products and 80% of meat is used for home consumptions. Small quantities of milk and cheese are sold to neighbors and 20% of meat is sold to traders at the farm gate and within the community (lamb and kid within the community and calf to traders). Although there is a general trend of decreasing goat and sheep numbers, people keep animals for different uses.

People do not only keep livestock for subsistence production, but mainly for income generation/trading. Sheep and goats are illegally sold to Greece, at 30% higher prices. Recently, people in these villages have started to sell meat to traders at the farm gate for the market. Meat from the region is known for its high quality and good taste ("organic" production, no vaccination, no artificial concentrate etc.)

d. Forestry and Pasture

The total forest land inside NPP is 13500 ha, from which 9399 ha (69.6%) belongs to state forest land, 3721 ha (27.6%) to communal and 380 ha (2.8%) to private forest land. The current uses of forests and woodland in the basin may be categorized in three groups: grazing and fodder, timber and fuel wood, and non-timber forest products. At least 5000 people dependence on fuel wood and fodder from an already degraded forest.

Traditionally, livestock rising was an important economic activity. Taking into account that at least half of the cattle and about all the horses, donkeys and mules are kept in the households the total present livestock pressure from inside the park is estimated at 2900 LSU (livestock units) and another 1000 LSU may come from outside the national park [6]. The 3900 LSU are not equally spread over a grazing area of 1880 ha and a forest area of 4350 ha. However, abandoned lands and inhabited areas (4950 ha) and cultivable land (2100 ha) are available as well as pasture in the NP, thus relieving the pressure on the forest rangelands and pastures.This results in a total grazing area of about 13280 ha, giving a theoretical livestock charge of 0.3 LSU/ha (= 1.5 Sheep Equivalent Units (SEU)/ha).

From this estimation, it is clear that the present grazing pressure is probably still too high for the generally degraded vegetation resources. A continuation of the trend of decreasing livestock numbers and/or improvement of the grazing schemes and thus the state of the pastures will be necessary to resolve this situation.

Tree looping for winter fodder production is considered a problem in the Albanian part of the basin, where oak branches are reported to supply about 80% of winter fodder requirements. As a result, woodland near the villages is degraded. For the estimated number of 4067 goats a lopping area of 244 ha should be provided annually and for the 3667 sheep another 220 ha may be needed. These cuts can be executed every 5 years on the same area. Thus, a total oak bush area of 2320 ha should be foreseen for lopping, which is about 42% of the 5500 ha of oak shrubs in the park. In future, some leaf fodder could be provided through the scheduled clear-cutting and releasing (singling of coppices) work in the managed oak stands and later on by green pruning.

Wood in the Prespa lakes basin is mainly used for fuel, through legal and illegal cutting. According to estimates of the NPP Administration, the amount of self-consumed wood inside the NP is around 10000 m^3 stere. Additionally, 1000 m^3 stere is cut and sold to outside communities and an amount of mostly illegally cut wood of 4000 m^3 stere/year is taken out by some neighboring communities like Zvesda, Bitincka or Tren. The total annual demand of wood from the Communal Forest of Liqenas has to come from a forest area of 7500 ha, of which 1000 ha of

the grazed forest land bordering Greece will fall into one of the proposed core protection zone of the national park. This gives an average demand of 1.4-1.9 m³/ha/yr, or without core zone of 1.6-2.2 m³/ha/yr, which can hardly be met by the present growth of these types of forests of 0.35-2.2 m³/ha/yr (estimation of the Communal Forest Management Plan of Liqenas, 2001). However, through rehabilitation, the forest productivity could be improved up to 3-4 m³/ha/yr [6].

e. Fishing

Fishing is reported to be one of the most important sources of income for the Albanian part of the basin, contributing more than 15% of the annual per capita income. Statistical data on fishery production and the species caught are fragmentary [2]. In years, production and structure has gone under oscillations (Table 2, 3). In table 2 is shown fishery statistics for Macro Prespa [5], and in table 3 are shown fishing data for the Albanian part of Micro and Macro Prespa for year 1987, 1989 and 1990. In general, fish production in the basin has suffered a serious decrease over the last two decades or so due to a combination of ecological, social and economic factors.

Table 2. Fishery statistics for the Albanian part of Macro Prespa

Years	Carp (%)	Nase (%)	Bleak (%)	Total catch (kv*)	Yield (kg/ha)
1954-1960	20	13	67	1 500	3
1960-1970	13	5	82	3 700	9
1971-1975	3	6	91	18 072	90
1976-1980	0.5	4	95.5	25 989	129
1981-1985	0.5	3	96.5	22 415	112
1986-1990	4	5	91	12 177	60
1991-1995	5	8	87	6 933	34

***** 1 kv = 100 kg

After years' 70-ies the fish yield in Albanian part of Prespa was increased mainly by the perfection of bleak fishing using lights. But the decrease after 1986 may be by the decrease of fish reserves due to continuous decrease of water level (more than 6 m). The littoral zone of fine and clean gravel, considered an ideal habitat for the reproduction of bleak, disappeared. The lakeshore retires, from the gravel to muddy and sludgy, have probably caused difficulties into regeneration of bleak reserves.

Albanian part had appropriate zones for the reproduction of bleak and carp, which actually part of them have been substituted by the organic depositions. With the decrease of water level it is evidenced also a decrease and retire of reed bed, which in 1997 was reduced until 20-25 % of the surface occupied before 1986. This limitation of vegetation belt have probably affected on the growth, sheltering and feeding of skardinus and rutilus.

The same can be confirmed for the decrease of the carp, which is a periphytonic breeding species, and very good indicator of these habitats. Moreover, this situation is considered to be manly of natural origin rather than anthropogenic.

Table 3. Fish catches (kg/year) for the Albanian part of Macro and Micro Prespa lakes, for three years

Species	1987	1989	1990
Macro Prespa			
Squalius prespensis and *Chondrostoma prespense*	7 800	15 411	7351
Alburnus belvica	237 200	210 314	13
Carassius auratus	0	702	26
Total	246 700	234 518	8 958
Yield (kg/ha)	63.6	60.4	2.3
Micro Prespa			
Cyprinus carpio	1000	7 200	6 028
Anguilla anguilla	0	600	315
Squalius prespensis and *Chondrostoma prespense*	6 700	5 300	1 854
Alburnus belvica	4 100	19 200	1 434
Total	11 800	32 300	9 631
Yield (kg/ha)	23.6	64.6	19.3

The last decrease (after 1991) was because of transition situation in Albania, mainly due to not regular and controlled fishing activities, and to decrease of demand for bleak. While the decrease in Micro Prespa, especially after 1987, is related with water input from Devolli River, high alluvial depositions into the lake, in the most important fishery habitats. As a matter of the fact, whole areas of the bleak and carp growth and reproduction, as well as the benthos rich in mussels, have been totally disappeared. However, till 1995 no decrease in carp production has been noticed.

During last decade local fishermen have over exploited resources in an illegal or uncontrolled way. In some cases, even dynamite fishing has occurred. Instead of only four fishing groups before 1991 (licensed and controlled), there are only two organized and licensed fishing groups (1997), equipped with fishing boats. But there are many others aiming to earn some money by fishing, selling the fish in Korça, or beyond the state border.

The marked is rather distant, and the road not very comfortable, therefore high quantities of fish deteriorate.

Species in low number, which are usually endemic species, are in danger of further decreasing. Fishing is controlled by a licensing system and a fishing ban. The NP administration has implemented a one-month fishing ban during the spawning season May/June. It is reported that the majority of fishermen respects the ban. Fishermen have to pay €40 for a one-year fishing licence, which is not paid by all of them. Thus, there are some illegal fishing activities occurring in the area.

Economically valuable fish species, such as carp (Cyprinus carpio), have dropped while less demanded smaller fish species have increased. The average daily catch of one fisherman is 25 kg of small fishes (only small quantity of carp) between April and October. Between November and March, the average daily catch is 1.5 kg of carp (only small quantity of small fishes). It is assumed that some of presently applied fishing techniques are not sustainable because too many fishes are caught.

In most fishing households, at least two people are involved. While the men go fishing by boat, many women take the bus to the closest city Korça (45 minutes far) to sell the fish in the streets. They do not sell the fish on the local fish market because they do not have a business licence. In Korça, the average price for small fish is 0.5€/kg, for carp 3.5 €/kg. The price is lower in May/June and higher in October/November. Although the average price is 30% higher in Korça than in the Prespa area, it is difficult to sell the fish and means a long and hard working day. Smaller quantities of fish are sold in Prespa area. There are traders who buy the fish in the area. Some fishermen dry small fishes with salt for the winter period but only in small quantities because they need to sell the daily catch for income generation. A disproportion exists between supply, which is bigger in winter, and demand, which is higher in summer, and market fluctuations are high.

e. Tourism

This section of the study identifies the size and characteristics of available tourism markets for Prespa study area. Tourism in the lakes area is small-scale rural and family tourism, based on a few small hotels, private accommodation and restaurants. Features of the lake area appreciated by visitors are especially the lake, clean air, quite and peaceful environment and historical sights. The region is known for the traditional and high quality food and its hospitable people. Today, tourism plays an important role, as access to rural areas has improved, and more and more people are traveling.

At present, tourism to the area is mostly limited to seasonal visits by tourists. The numbers and origin of visitors indicate that the Prespa area is more demanded by domestic and in particular by regional tourists from neighbouring countries. The rate of development of this tourism potential has been slow due to the lack of proper planning and financial constraints.

According to the data collected by us in Lakes Prespa area [7], the capacities for overnight stays in hotels are 34 beds, for private accommodation 440 beds and there are 11 restaurants with 375 seats (Table 4). The occupancy rate for the hotels ranges from 10-20% (average 11.6%) and for private accommodation between 0.4 and 8% (average 3%). Restaurants are reported to have about 1000 visitors per day at the weekends during the main summer season (July and August), resulting in approximately about 11520 visitors a year.

The current state of tourist infrastructure presents an obstacle, in combination with the problems of other services in the area (telecommunications, drinking water etc.). The quality of the services offered calls for improvements too: boat trips, swimming, guided tours of

Table 4. Annual income of tourism in National Park Prespa

Name	No. of beds	Overnigh Capacity	Overnight	Employees (permanent/seasonal)	Income (€)
a. Accommodation	34	12 410	1 438	10/12	14 380
Hotels	440	160 600	4 824		24 120
Private Accommodation	474	173 010	6 262	10/12	38 500
Sub – total					
b. Food	Seats	Capacity	Visitors	Employees (permanent/seasonal)	Income
Restaurants	375	136 875	11 520	28/32	57 600
Total				38/44	96 100

historical monuments, insufficient number of nature observation points, small-scale conference facilities. The lack of public investment in the conservation and restoration of tourist attractions - archaeological, historical, cultural and ecological – is aggravated by the insufficient information and promotion. The stresses on the environmental health take their toll on tourism too, like the challenged appeal of the lakes as swimming resort due to eutrophication and increased pollution. The waste disposal problem in Prespa is important. The foreseen increase of visitors and changes in consumption patterns, request for good planning and the development of necessary infrastructure to accommodate future needs.

3.4 Priority Issues for Sustainable Development in Prespa National Park

The steps that were undertaken by us in assessment of sustainable development in Prespa region were the following: needs identification and community assessment and the ranking of priority issues for sustainable development. In Grazhdani (2010) are given the results of SWOT analysis method for the performance of needs identification and community assessment for sustainable development in Lakes Prespa region. After the needs identification and community assessment was finalized, the issues to be the most important for the sustainable development in Lakes Prespa area were set by us. The ranking of priority issues to be evolved in the future for sustainable development in Prespa National Park are as follows:

Sustainable use of natural resources: involvation of mixed small farm systems that combine crops, animals and trees, organic farming; decreasing the total sheep and goat numbers, increasing or remaining stable of cow numbers and specializing some farmers and enlarging their herd size, but rather in cow and sheep than in goats; elaboration of forest function plans and forest managemant plans for the forest area inside NPP, no more signs for illegal firewood cutting, browsing and tree lopping; introduction of a sustainable silvi-pastoral system; assistance to afforestations for firewood production inside NPP; creation of infrastructures and procedures for restarting of alpine and sub-alpine pastures for livestock grazing; enrichment of autochthonous fish stocks; etc.;

Conservation of environment: protection of conservation status of key habitats and key species in the region, ecological integrity of significant habitats; adequate deposal of solid waste and construction of wastewater treatment system, adequate road and transport facilities; reliable power and drinking water supply etc.;

Park management effectiveness and operations: elaboration of Park Management Plan according to international standards; strengthening the park's management effectiveness by acquisition of essential infrastructure and equipment; enhancement of staff capacities (to include education and tourism, monitoring and research sections) to be compliant with legislative and expanded management requirements; introduction of appropriate planning instruments, establishment of working arrangements with partners and operational planning; redefinition of responsibilities for financial management and operational planning; park staff qualifications in relation to its new responsibilities; establishment of monitoring procedures; contribution of park to the income of the local population; establishment of transboundry management programmers with Galiçica Park (in Macedonia) and Prespa National Park (in Greece); demarcation of boundaries and zones, installation of park signage etc.;

Ecotourism development: improvement of tourism infrastructure and services, seasonality, water quality and public access to the area; development of sustainable transport; protection of the waterbodies against pollution; creating a system for communal tax deduction for investment in development of tourist services; establishment of info center, organizing hiking, boat, baking tours in the region, medical and health services, cleaner environment & infrastructure (solid waste, waste water treatment); provision and management of beaches (cleaning). etc.; restoration and protection of the tourism and natural, historic and cultural heritages, monuments, traditional buildings, human traditional activities and cultural elements etc.;

Community involvement and economic benefits: establishment of structure and mechanism for public involvement as required by Law on Protected Area; establishment of the sustainable agriculture office and local office for monitoring and licensing of food quality etc.; wide use of the local productions (organic or protected area products), animal races and plant varieties; support for diversification of income sources; support for improved marketing of local products, elaboration and delivery of environmental education programme etc.

4. CONCLUSIONS

There are a number of obstacles to sustainable development in the Prespa National Park. Some of

these obstacles operate at higher levels (national laws, poor economic performance of the country and region as a whole, low influx of foreign tourists due to the decade-long conflicts and political instability in the region etc.). Some of them originate directly from the established management practices in the PNP that resist the deep paradigmatic shift in understanding the nature conservation and the notion of sustainable development.

For the future of the sustainable development, a major goal is to promote development of a balanced and diverse regional economy that wisely uses the region's natural, man-made and human resources, while respecting the limitations of the environment.

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